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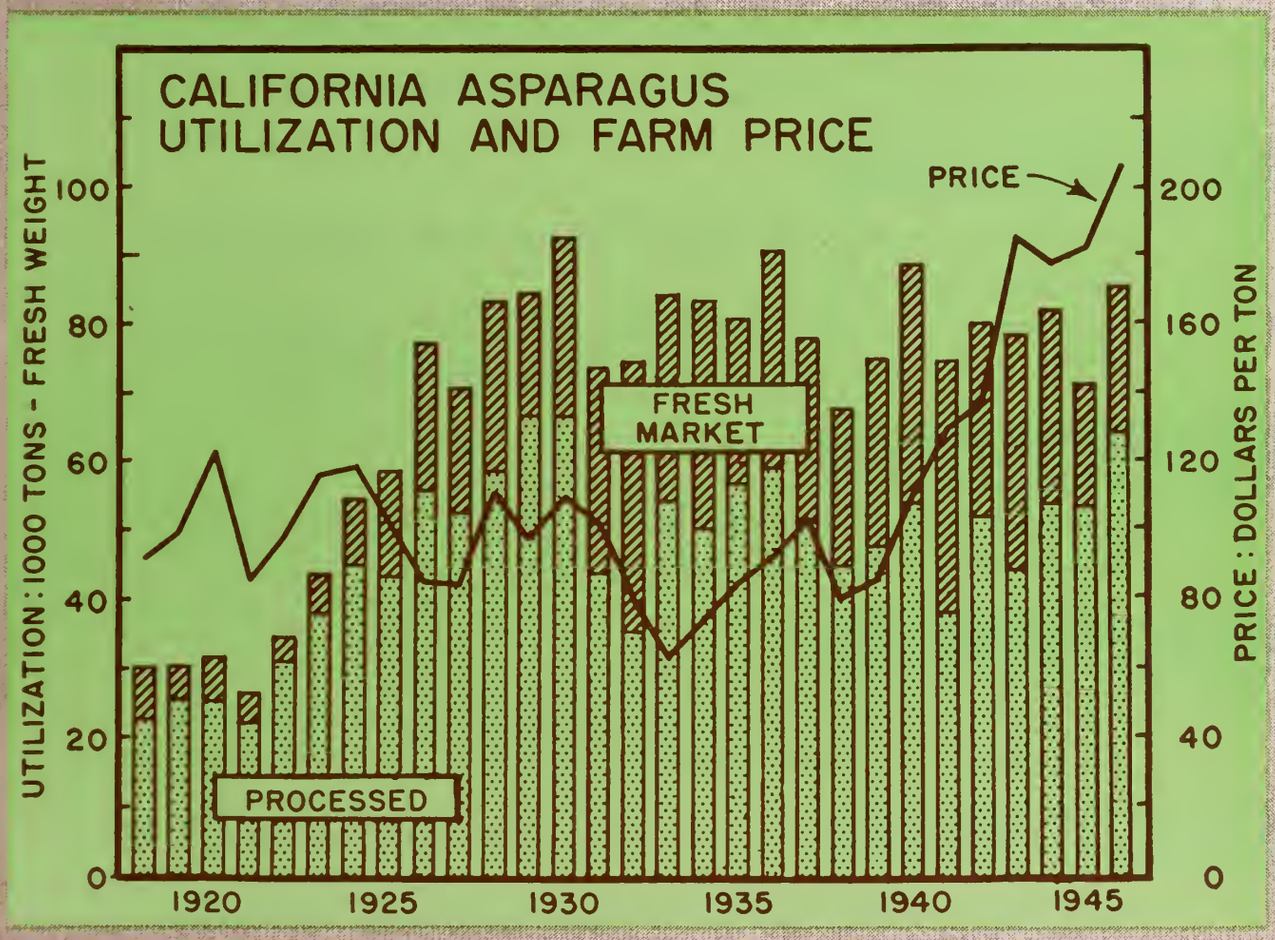
CALIFORNIA ASPARAGUS
ECONOMIC STATUS 1946-47

Sidney Hoos and H. Fisk Phelps



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Acreage . . . . .

—in California reached a peak in 1940, has declined since. 3
—elsewhere in United States increased at an even faster rate and more steadily, reached a peak in 1942. 3

Plantings . . . .

—in California have been increasing since 1943, and are large enough to maintain bearing acreage through 1949. 5

Production . . .

—in California, although it has increased to about two and one third times that in 1918, is now a little less than half the country's total. 6
—in United States has increased to four times that in 1918, and will probably continue to increase for several years. 6

Yields . . . . . .

—in California decreased from 1918 to 1932, have increased slightly since 1938. 7
—elsewhere in United States are higher on the average than in California—especially in New Jersey and Washington. 7

Fresh market

—now takes about 25 per cent of total production, both in California and in United States as a whole. 9

Canning . . . . .

—now takes about 60 per cent of total production, both in California and in United States as a whole. 10

Freezing . . . . .

—takes almost 15 per cent of total production in California, may increase. 11

Farm Price . . .

—in California for processing asparagus has been steadier than for fresh. 14
—increased sharply from the 1930's to 1946. 15
—will continue at present levels only if consumer income and purchasing power keep high. 15

CALIFORNIA ASPARAGUS: ECONOMIC STATUS, 1946-1947

Sidney Hoos[1] and H. Fisk Phelps[2]

Although California still produces more asparagus than any other state, important production shifts have occurred in recent years. Such shifts are discussed in this circular, as are also the factors of acreage and planting, production, use of the harvested product—fresh, canned, and frozen—and farm prices.

ACREAGE

The five-year downward trend in acreage probably will not continue. If state acreage is maintained, United States acreage may be maintained.

Since World War I, the total acreage of asparagus in the United States has increased better than 400 per cent: from 24,460 acres in 1918 to 124,820 in 1946. Although California's asparagus acreage also shows a substantial increase during this period—well over 300 per cent—it did not increase so rapidly nor so steadily as that of other asparagus-producing states.

Acreage in the United States increased sharply until 1933, declined somewhat for three years, then rose to a new peak in 1942. Figure 1 shows that the decline and rise from 1933 to 1940 was influenced by the decline and rise in California acreage. Since 1940, however, the decline in California acreage was offset, partly but not entirely, by the expansion of asparagus acreage in other states. But even in the total of states, excluding California, acreage has been barely maintained since 1943.

It is important to note (fig. 1) the consistent growth in acreage outside California. Not even the depression years of the 1930's caused a cutback in acreage. These comparative trends, in California and in the total of other states, clearly indicate the long-time shifts which occurred in the location of asparagus growing in this country.

States other than California which have substantial acreage in asparagus are New Jersey, Washington, Illinois, South Carolina, and Michigan, in decreasing order of acreage size. The relative amounts of acreage in New Jersey and Washington, as compared with California, are shown in figure 2. Not only have New Jersey and Washington shown a continuous growth, but they have expanded their acreage substantially during the past ten years. Together, they now have slightly over half (52 per cent) as large an acreage as California. South Carolina's acreage reached its peak with 9,500 acres in 1932, remained at

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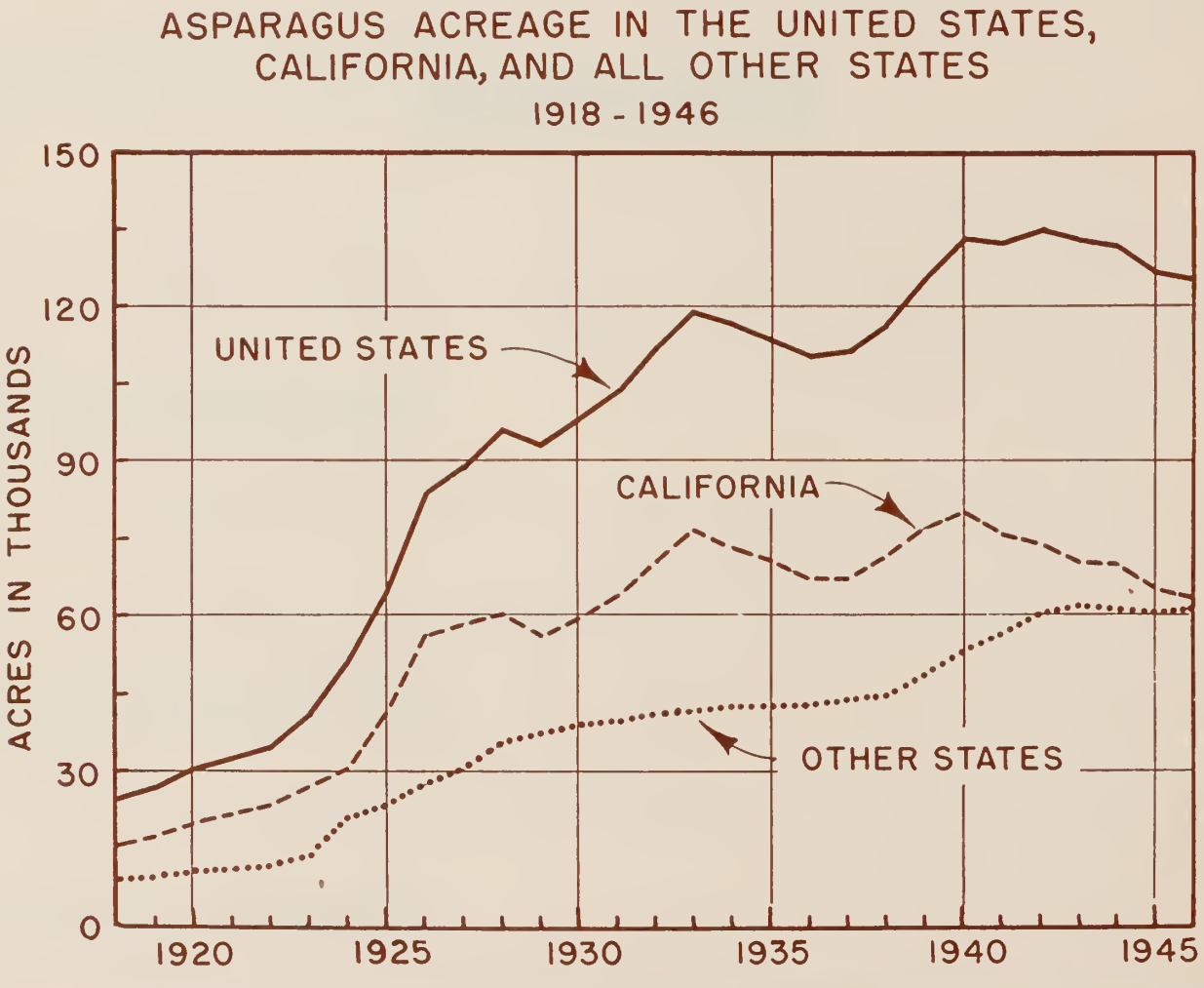
that level for five years, then, since 1937, has experienced a downward trend. Although both Illinois and Michigan have had a rising trend in acreage, they did not rise so steadily nor so high as did New Jersey and Washington.

No appreciable change in geographic distribution of total asparagus acreage within California has occurred in the past eighteen years. The Sacramento-San Joaquin Delta area had about 93 per cent of the total state acreage during that period. The only major change occurred in the Imperial Valley, where acreage decreased from over 2,000 acres in 1929 to 200 in 1946.

Figure 1



Imperial Valley's asparagus acreage was relatively high twenty to twenty-five years ago, because its production came on early and permitted a large shipment to eastern markets. However, in the Delta region of northern California the technique was developed of flooding the asparagus acreage in January and February to keep the ground warm and thus hasten production. By this method some of the asparagus was ready to be shipped to eastern markets well ahead of that of Imperial Valley. Another factor affecting Imperial Valley acreage was the undependable flow of asparagus to canneries in southern California, caused partly by fluctuations in the fresh shipping market and partly by extreme heat early in the season. Such factors led to the reduction of asparagus acreage in Imperial Valley and the substitution of alternative crops.

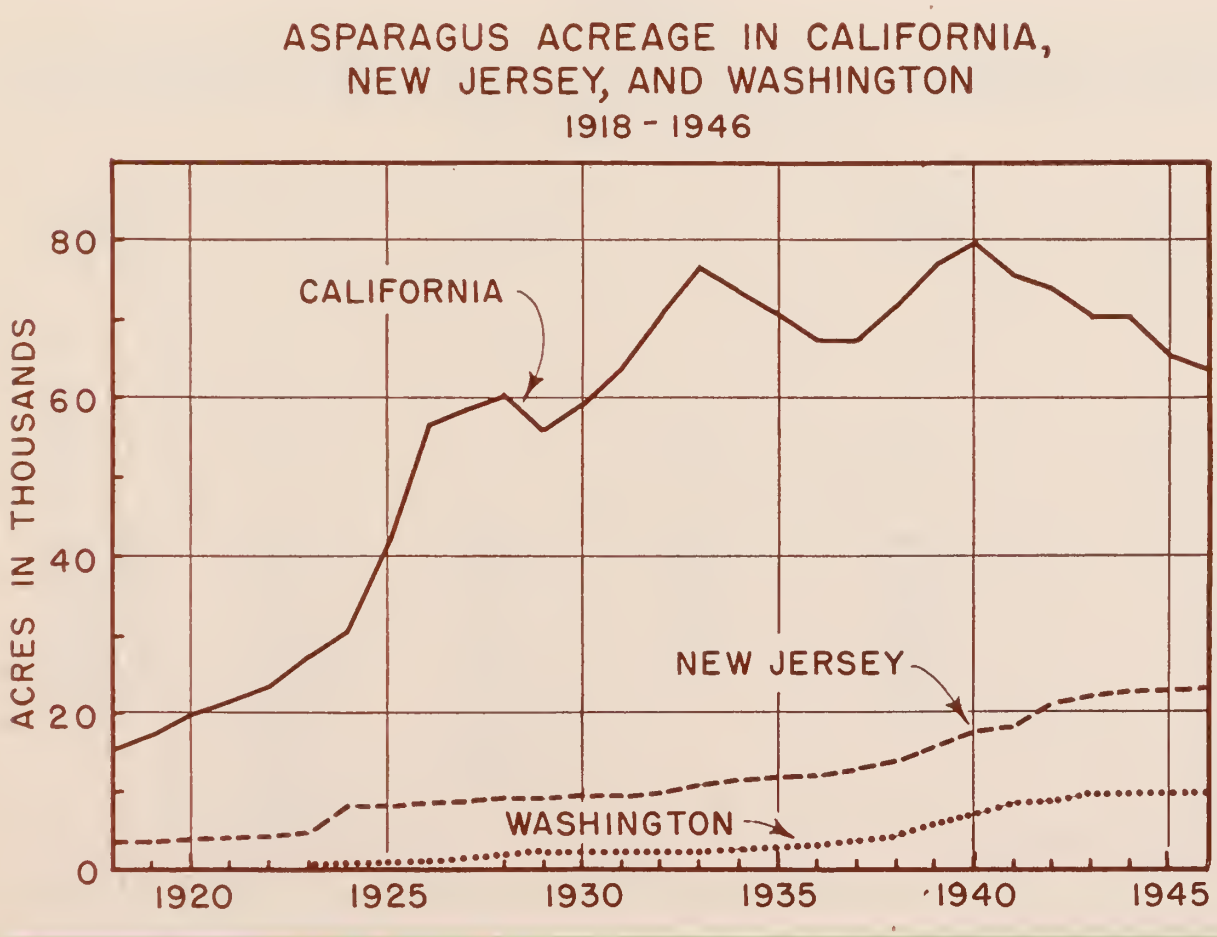
PLANTINGS

Bearing acreage will probably be maintained through 1949. Large plantings are necessary in 1948 and 1949 to maintain bearing acreage through 1951.

Although the trend in total asparagus acreage in California has been downward since 1940, plantings have increased yearly since 1943. Table 1 clearly indicates the present trend toward maintaining and, possibly, increasing bearing acreage north of the Tehachapi, which contains over 95 per cent of the state acreage.

Asparagus beds normally come into bearing at two years of age, and produce for about eleven years. Thus, acreage planted in 1945 will bear in 1947; and acreage planted in 1934 will ordinarily be out of production by 1947. Because of the variation in bearing life, however, estimates of removals in any one year (for example, 1947) are best made by averaging plantings for three years (for example, 1933–1935). The estimates of annual removals shown in table 1, column 4, must be equaled by plantings two years previous (col. 2) in order to maintain bearing acreage. The estimated removals for 1947 and 1948 were more than equaled by the plantings in 1945 and 1946; and intentions to plant for 1947—acreage that will come into bearing two years later—exceed the estimated removals for 1949. Indications point, therefore, to bearing acreage being at least maintained through 1949. Large plantings will be needed in 1948 and 1949, however, to maintain the bearing acreage through 1951.

Figure 2



Analysis of trends in California asparagus acreage plantings and removals indicates that the downward trend in acreage of the past five years probably will not continue. During that period, acreage in the major producing states other than California was either constant or increasing; thus, the United States acreage decrease from 1942 to 1946 was caused primarily by a decrease in California acreage. Since, as mentioned above, California acreage will probably be maintained for the next three or four years, it is likely that United States acreage will be at least maintained.

PRODUCTION

If present acreage is maintained, state production will remain at about the present level—or possibly a little higher —for several years.

United States harvested production of asparagus showed a steady increase from 1918. By 1945, it had increased almost 300 per cent. In contrast to the steady increase in United States production, California harvested production reached a peak in 1930, and since then has tended to decrease slightly. Compared with the 300 per cent increase for the country as a whole, California's 1945 production was about 130 per cent greater than in 1918. For a clearer understanding of these changes, trends in the major producing states will be considered separately.

California. Asparagus production in California increased sharply from 1921 to 1930, then fluctuated about a slightly declining trend. Associated with the

Table 1

PLANTINGS, REMOVALS, AND BEARING ACREAGE FOR THE CALIFORNIA AREA NORTH OF TEHACHAPI

Period or year	Intentions to plant	Planted	Coming into bearing	Plowed out	Bearing acreage
	1	2	3	4	5
	Acres				
Average 1938–1942	9,350	7,116	.....	8,082	72,183
Annual					
1943	2,503	2,371	7,443	7,968	68,204
1944	3,998	2,784	7,492	6,594	67,690
1945	5,990	5,795	2,371	4,490	63,293
1946	9,869	7,716	2,784	5,946	61,543
1947	12,830	.....	5,795	4,700*	61,299
1948	.....	.....	7,716	7,500*	.....
1949	.....	.....	12,830*	11,000*	.....
1950	.....	.....	.....	11,700*	.....
1951	.....	.....	.....	9,700*	.....

* Estimated (see text p. 5).

reduced acreage during the 1930's was a dip in production. Although production recovered, it did not reach the 1930 peak. As shown in figure 3, California's production exceeded that of all other states combined until 1941; since then, the aggregate production of other states has continued to increase. As a result, California now produces a little less than half of the country's asparagus, in contrast to over three fourths (77 per cent) during 1918–1920.

Other States. The production trends for New Jersey and Washington—the two next largest producing states—are shown in figure 4 for comparison with California's annual output. Production in New Jersey has followed an accelerating trend, for the period as a whole, as has that in Washington since 1935, in contrast to California. South Carolina's production, because of low yields, has not been in proportion to its acreage.

Yields. The volume of asparagus production in any year largely depends upon the amount of bearing acreage and its yield per acre, which is affected by the age distribution of bearing acreage. Although estimates of age distribution of bearing acreage are available only for California, yields per acre have been computed for all states. Figure 5 shows the yields for the three states leading in production. California experienced a gradual downward trend in yield from 1918 to 1932, with wide fluctuations from year to year. Since 1938, California's yield has varied about a slightly rising trend. Both New Jersey and Washington have shown definite upward trends in yield since 1924, and have enjoyed appreciably higher yields than California during the past ten years.

Production Outlook. Accurate forecasts of future production cannot be made because complete data are lacking. Tentative estimates can be made,

Figure 3

HARVESTED ASPARAGUS PRODUCTION IN THE UNITED STATES, CALIFORNIA, AND ALL OTHER STATES

1918 - 1946

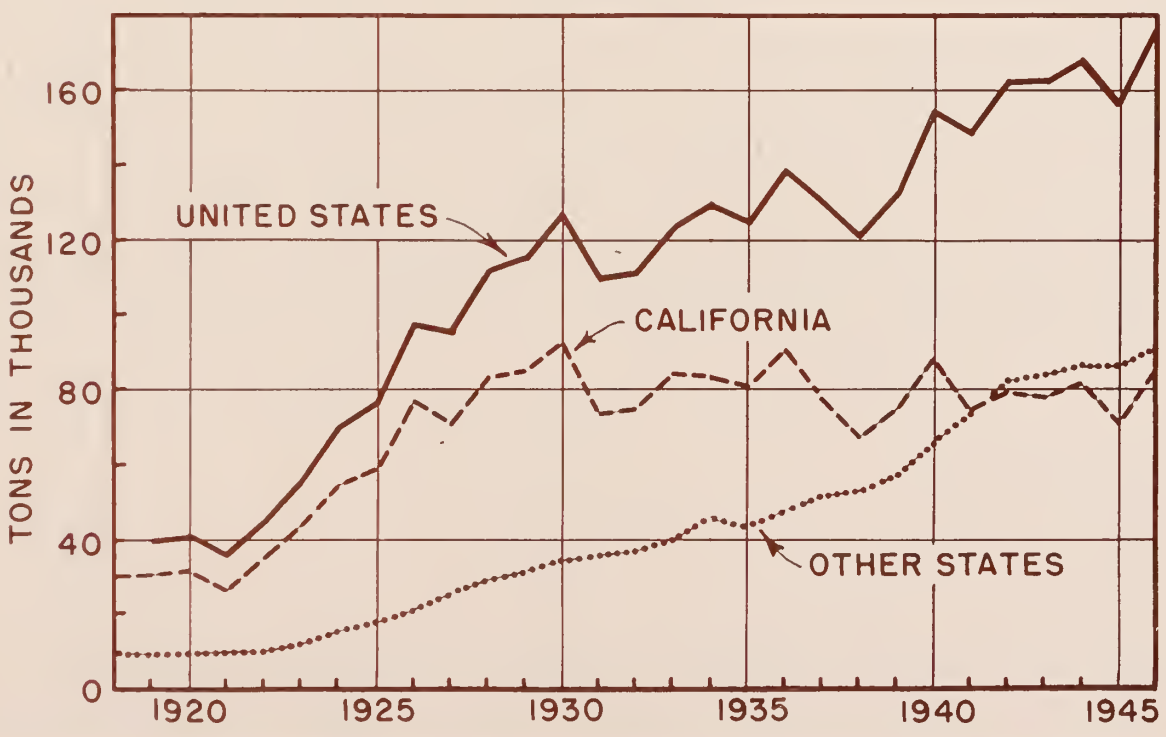
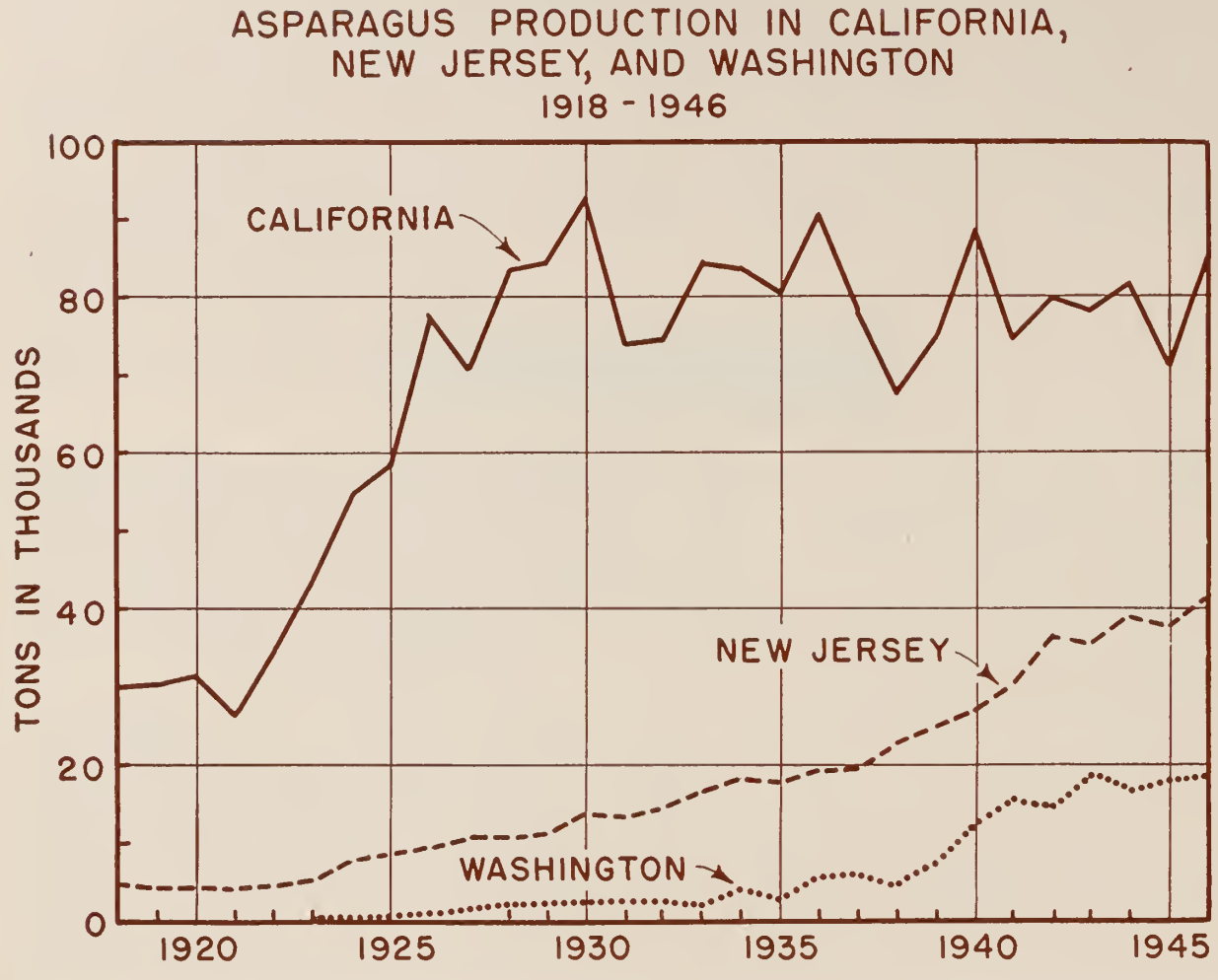


Figure 4



however, on the basis of the present and prospective trends in acreage and yield, assuming that age distribution of asparagus beds remains relatively constant. Although California acreage (fig. 1) has followed a slight downward trend over the last seven years, the present acreage will probably be maintained. This, in conjunction with slightly increasing yield (fig. 5) experienced during the past eight years, can be expected to result in state production remaining at about the present level—or possibly a little higher—for several years.

In the other major producing states—New Jersey and Washington—both acreage and yield per acre (fig. 5) have been increasing steadily over the past ten years. Production is likely to continue its present upward trend in both of those states (fig. 4). For the United States as a whole, the constant or the slightly decreasing trend in California asparagus production will probably be more than offset by the increasing trend in production in the other states; thus, United States asparagus production probably will continue to increase gradually for several years.

Production statistics do not completely reflect the final use of asparagus. First, some quantities included in production data may not be marketed because of economic conditions, prorate and marketing agreements, or disease. Second, part of the crop is processed, while the rest is shipped to fresh market. And third, production for processing may go into either canned or frozen outlets. It is necessary, therefore, to consider utilization data to get a more complete picture of the trends in the use of harvested asparagus.

USE OF HARVESTED PRODUCTION

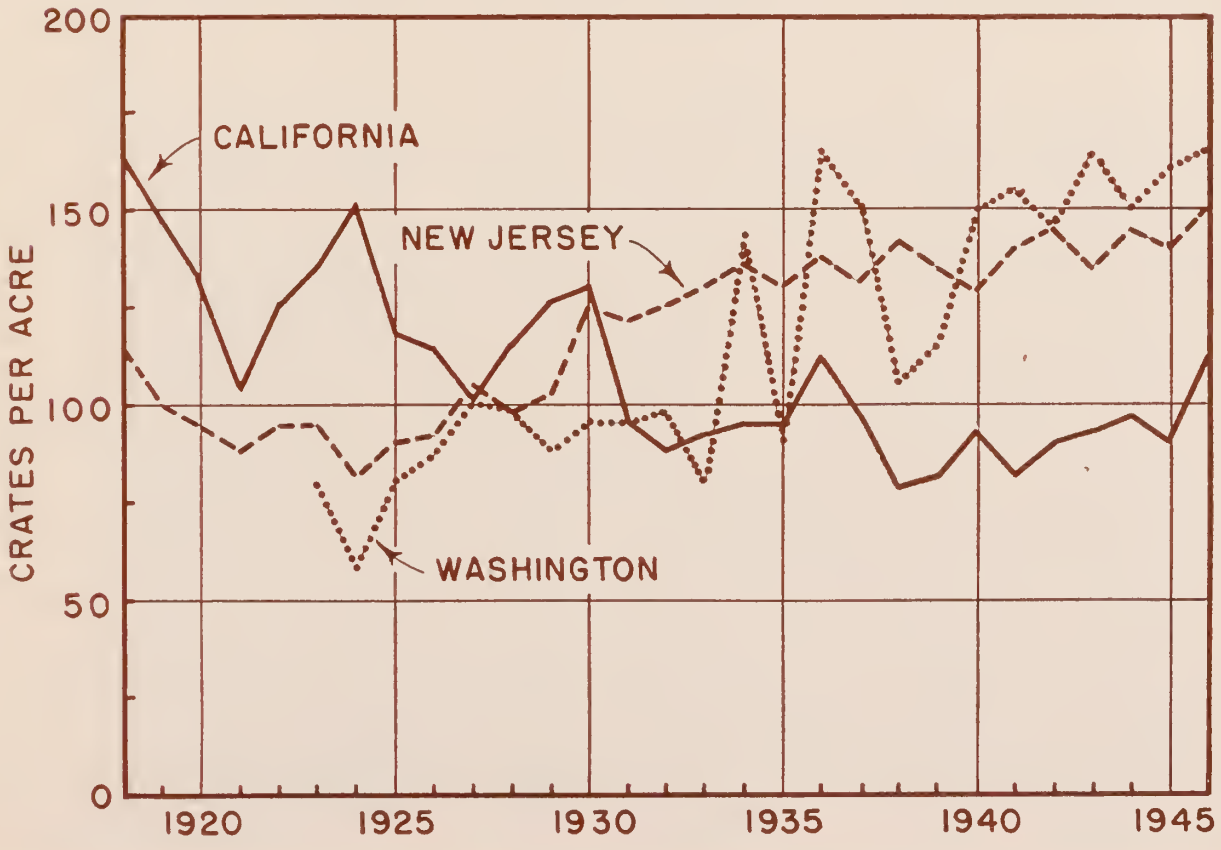
In California, canning now takes about 60 per cent of harvested production, fresh shipments 25 per cent, and freezing 15 per cent.

In the United States as a whole, harvested production going into fresh use increased steadily from 1922 to 1932, then gradually decreased with great yearly fluctuations. In 1918, asparagus going into fresh-market channels made up over 40 per cent of the total harvested production. Although the proportion had increased to almost 70 per cent by 1932, it then decreased so that by 1945 only 25 per cent of the total production was utilized in fresh form.

The amount of harvested production used for canning in the United States increased steadily during the entire period 1918 to 1945, except for a sharp drop in 1931 and 1932, and again in 1937 and 1938. Although the absolute quantity canned increased over this period, the percentage of the total harvested production canned showed marked fluctuations. Making up 57 per cent of the total production in 1918, the proportion canned increased to almost 70 per cent in 1922, decreased to slightly over 30 per cent in 1932, and gradually recovered to 60 per cent by 1945.

Figure 5

YIELD PER ACRE OF ASPARAGUS IN CALIFORNIA, NEW JERSEY, AND WASHINGTON
1918 - 1946



Figures on the use of asparagus for freezing were first reported in 1937, when about 5 per cent of the total United States harvested production was used for freezing purposes. For the last three years, both the absolute quantity frozen and the percentage of total production frozen have increased. In 1946, almost 15 per cent of total production went into commercial freezing.

California. The use of harvested asparagus in California (fig. 6) has shown somewhat different trends from those for the United States. The quantity going into fresh-market channels increased during the ten-year period 1922–1932, but since then has followed a gradual downward trend. In 1918, the proportion of California harvested production used fresh was 25 per cent. By 1932, fresh usage had increased to over 50 per cent of the total, but gradually returned to the 25 per cent level in 1945—about the same as for the United States as a whole.

The quantity of California harvested production moving into canning channels increased strongly from 1921 to 1929 (fig. 6). After a sharp decrease to 1932, canning use increased again to 1936 and then fell to a lower level in 1938, about which it fluctuated through 1945. The percentage of California harvested production used for canning has followed a steady downward trend; comprising 75 per cent of the total in 1918, the proportion canned had decreased to 47 per cent by 1932, and then recovered so that, in 1946, 61 per cent of harvested production was used for canning. The extent to which California's importance in the canning industry has decreased is brought out in

Figure 6

UTILIZATION OF CALIFORNIA HARVESTED ASPARAGUS PRODUCTION
1918 - 1946

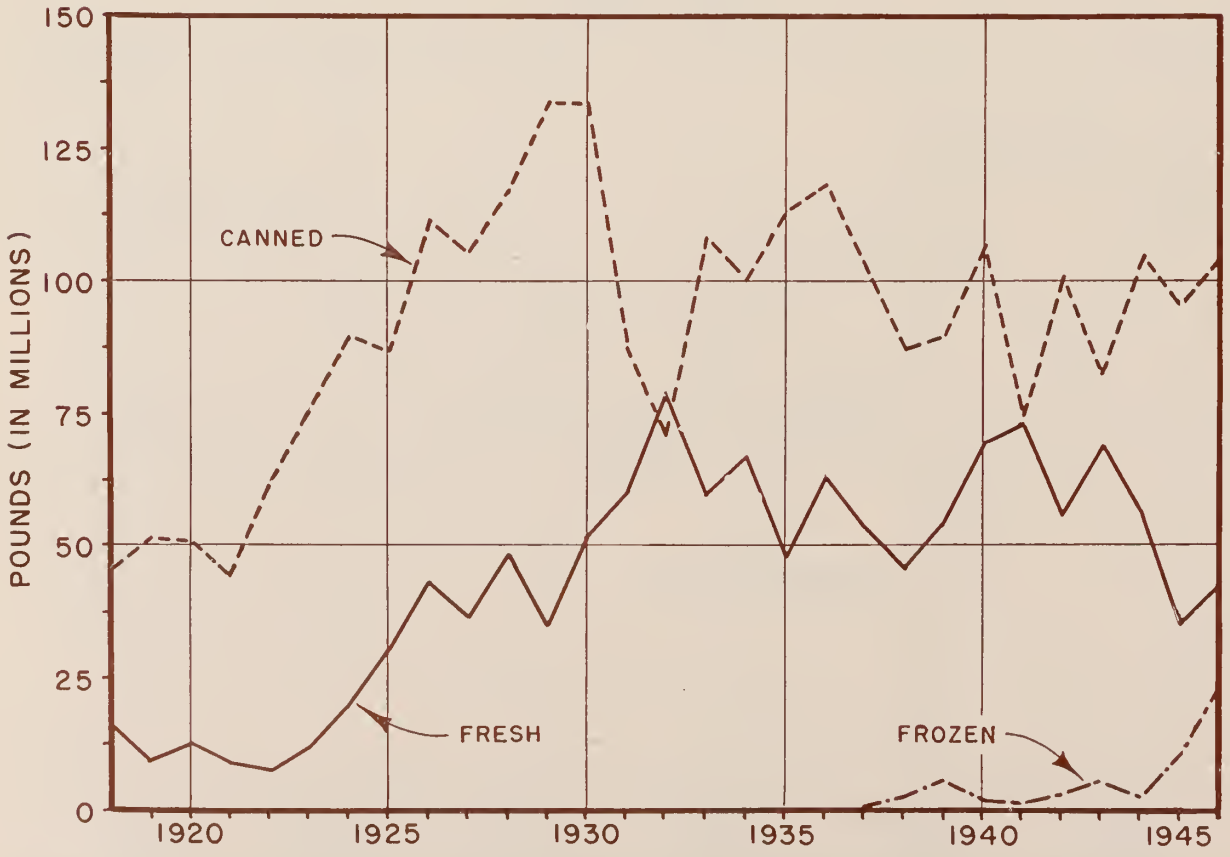


figure 7. In 1934, California packed about 90 per cent of all asparagus canned in the United States. Since 1941, however, this state has accounted for about 60 per cent of the total pack. This change in percentage is due mostly to increases in tonnage packed in other states.

California asparagus for freezing is more significant from the viewpoint of its potential growth than from the quantity now used by the frozen-food in-

Table 2

CARLOT SHIPMENTS OF FRESH ASPARAGUS BY STATES OF ORIGIN

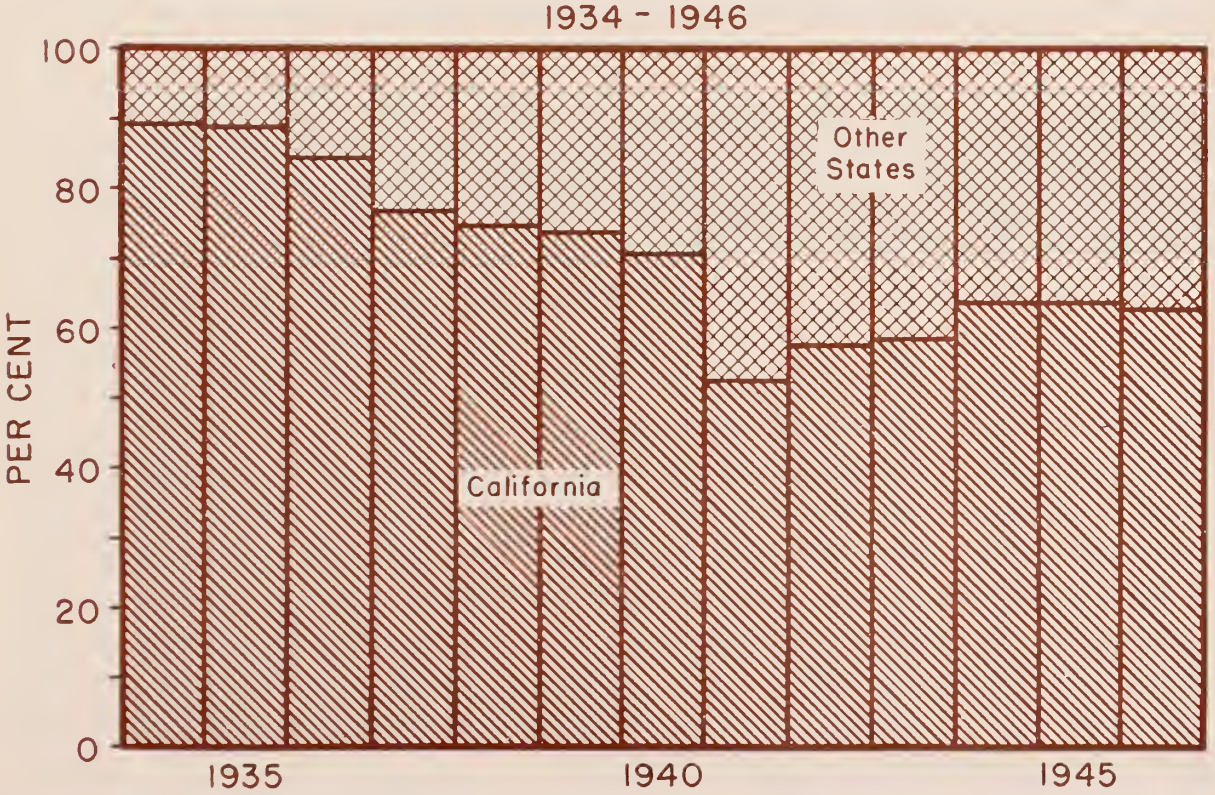
(Railroad cars)

Period or year	California	Georgia	Illinois	New Jersey	South Carolina	Washington	Others	Total United States
Average								
1920–1924	469	2	149	215	140	6	3	983
1925–1929	1,393	88	165	120	409	94	18	2,287
1930–1934	2,608	113	109	18	539	84	92	3,563
1935–1939	1,636	70	31	1	343	41	65	2,186
1940–1944	2,178	10	6	11	116	85	8	2,213
Annual								
1945.....	829	0	11	12	111	18	0	981
1946.....	1,287	3	12	2	57	12	0	1,373

Figure 7

CANNED ASPARAGUS PACK IN CALIFORNIA AND OTHER STATES AS PER CENT OF UNITED STATES PACK

1934 - 1946



dustry. In 1945, about 14 per cent of the production was frozen. The development of varieties more suitable for freezing will help to expand the frozen-asparagus outlet.

The proportions of California harvested production going into both fresh and canned channels have remained fairly constant since 1932—at about 35 per cent for fresh use and 60 per cent for canning. In 1946, frozen utilization showed a marked increase, and the upward trend is likely to continue with the growth of the frozen-food industry.

Fresh Shipments. The production of asparagus for fresh-market use is concentrated in relatively small areas in a few producing states. From these "surplus" producing areas, the greater portion of the season's fresh supply is

Table 3

PERCENTAGE DISTRIBUTION BY GEOGRAPHIC DIVISIONS OF CALIFORNIA CARLOT SHIPMENTS OF FRESH ASPARAGUS

Period or year	New England	Middle Atlantic	East North Central	West North Central	Mountain	Pacific	Others
	Per cent						
Average							
1933–1937	11.3	47.9	21.9	7.3	2.5	5.1	4.0
1938–1942	11.9	46.6	26.5	6.0	2.2	3.7	3.1
Annual							
1943	8.9	42.7	26.4	6.7	2.7	4.9	7.7
1944	7.7	44.7	26.9	7.5	4.0	3.9	5.3
1945	5.7	41.1	27.7	6.3	6.3	8.8	4.1
1946	9.0	49.9	25.5	4.2	2.6	3.6	5.2

shipped to the great consuming centers of the nation. Reliable data are available only for carlot shipments (table 2) of fresh asparagus. But carlot shipments do not give a complete picture because an increasing amount of shipments in the eastern states have been made by truck movement, especially to local and near-by markets. Thus, carlot shipments give an exaggerated picture of California's importance as a shipper of fresh asparagus, relative to other states. However, they do give an adequate picture of the state's shipments to middle western and eastern markets.

The distribution of California's carlot shipments of fresh asparagus has shown few significant changes over the last fourteen years. Table 3 compares the percentage of California's shipments sent to the various geographic regions of the United States from 1933 to 1946. During the war years the decrease in percentage of California shipments to the New England and Middle Atlantic states was accompanied by a corresponding increase in shipments to the Mountain and Pacific states. In 1946, however, the prewar distribution of shipments again prevailed to a great extent.

FARM PRICES

Farm prices of asparagus in 1946-47 exceeded peak wartime levels. However, wartime influences cannot be expected to continue indefinitely.

The season's average prices received by farmers for asparagus in all states have shown three distinct trends during the 1918–1946 period: increasing from 1918 to 1922; decreasing from 1923 through 1933; and rising sharply since 1934.

The farm price for fresh-market asparagus in the major producing states is shown in table 4. During the period 1918–1932, the price in California was below the average for all states, but since 1933 (except for 1945) it has averaged well above the prices in Washington and New Jersey, as well as the average for all states. California fresh shipments to eastern markets occur in the early weeks of the season, when the market price is high and before eastern shipments are large enough to depress the market price.

The farm price for processing asparagus (table 4) is the average of the prices paid for the two types of asparagus used for commercial processing—regular white and all green. The prices paid growers for each type have followed the same trends and fluctuations over the last fifteen years. However, the prices for all-green asparagus have been higher than those for regular white. During the last ten years this differential has been relatively constant, at about $20 per ton in favor of the all-green. The differential is influenced not only by the increased preference of consumers for the canned all-green asparagus, but also by the higher farm production costs. Farmers have to pay asparagus cutters

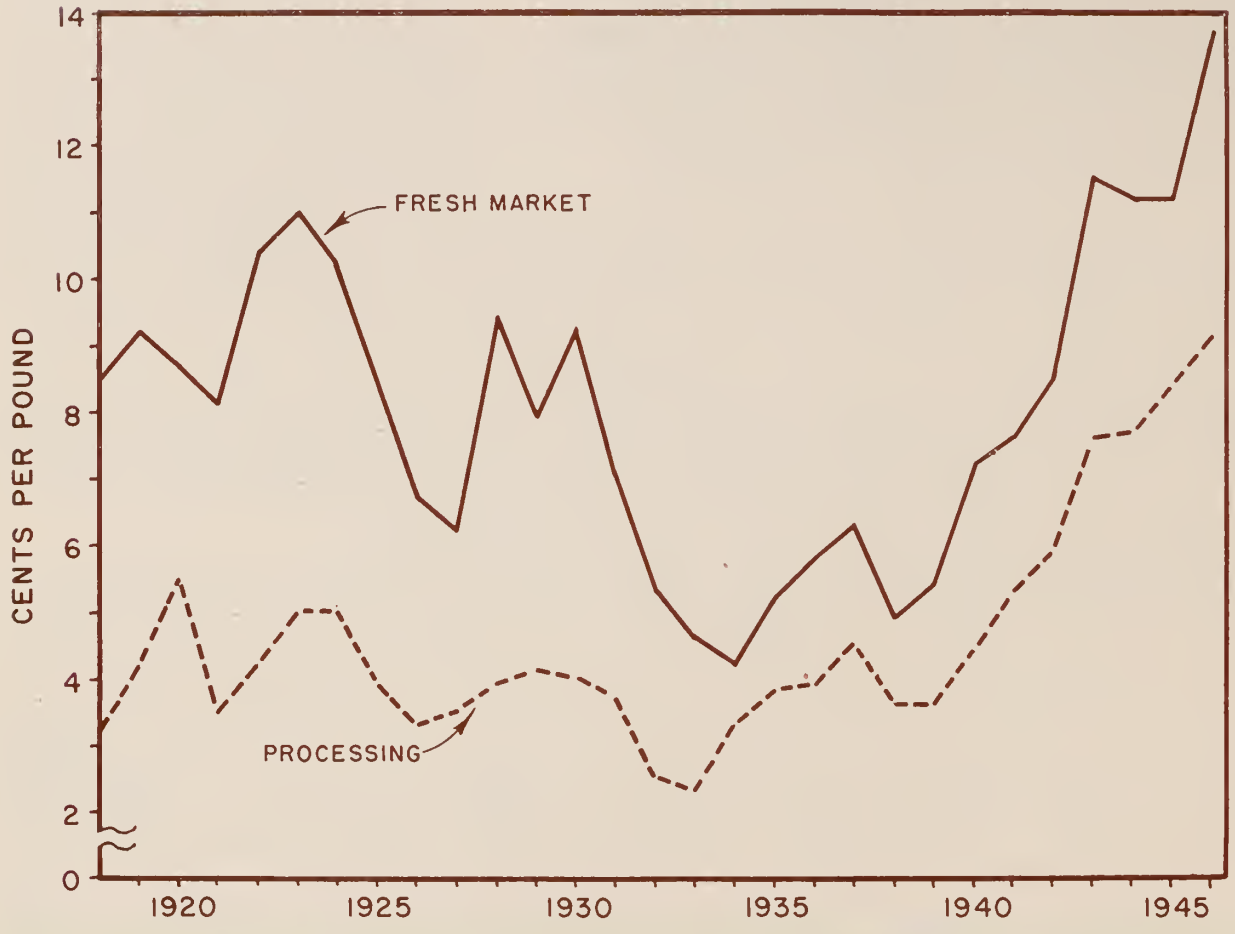
Table 4

SEASON'S AVERAGE FARM PRICE FOR FRESH-MARKET AND PROCESSING ASPARAGUS

Period or year	Fresh market				Processing
	California	Washington	New Jersey	Average all states	California
	Dollars per crate				Dollars per ton
Averages					
1918–1922	2.16	....	2.37	2.56	83.00
1923–1927	2.05	2.49	2.44	2.41	83.00
1928–1932	1.86	1.87	1.66	1.94	74.00
1933–1937	1.25	1.05	1.13	1.25	71.79
1938–1942	1.61	1.17	1.52	1.50	91.24
Annual					
1943	2.75	1.85	2.50	2.44	151.30
1944	2.70	2.05	2.10	2.36	153.30
1945	2.70	2.15	2.80	2.76	168.00
1946	3.30	2.15	2.45	2.62	183.00

Figure 8

CALIFORNIA SEASON'S AVERAGE FARM PRICE
FOR FRESH-MARKET AND PROCESSING ASPARAGUS
1918 - 1946



more for cutting the all-green in the field than the regular white. Also there is greater breakage of the green compared with the white, which lowers the salable quantity of all-green per acre, and increases production cost per ton.

California Farm Prices. In order to compare farm prices of fresh-market and processing asparagus in California, both have been converted to a cents-per-pound basis (fig. 8). Both prices have shown two distinct trends—a decreasing one from 1923 to the middle 1930's, followed by a sharply increasing one through 1946. Although the two sets of prices have changed in the same direction, they have been at different levels. While farm prices for fresh-market asparagus have shown large annual fluctuations, the changes in the farm prices of processing asparagus have been more moderate.

California farm prices for fresh-market asparagus have been consistently higher than the farm prices for processing asparagus, when the two are compared on a cents-per-pound basis (fig. 8). Because the fresh-market farm price declined substantially more than did the processing farm price during the period 1918–1934, the premium in favor of fresh-market asparagus narrowed during that period. But since 1934, the premium has tended to increase again. The higher season average farm price for California asparagus going to fresh market is due to the fact that California fresh-market shipments are made primarily early in the season, when the price in eastern markets is at a relatively high level. As eastern-grown asparagus becomes more plentiful and the

market price declines seasonally, California contracts its fresh shipments, and production is channeled into processing outlets.

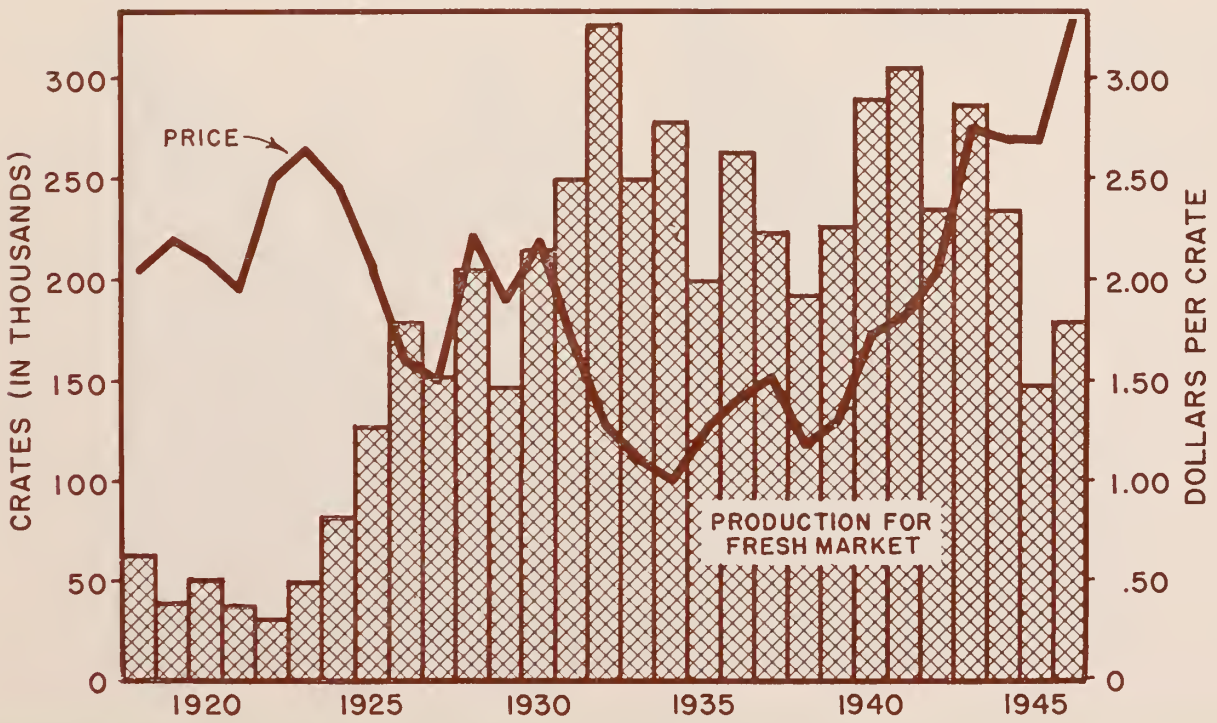
In order to illustrate the year-to-year relationship between California asparagus production for fresh market and the corresponding season's average farm price, the two are shown in figure 9. Along with the trend in increasing production for fresh market from 1922 to 1932, there was a tendency for the farm price to follow a downward trend. Although fresh-market production decreased sharply from 1933 to 1938, the farm price rose only moderately. Only after we had entered the World War II period did the California farm price for fresh-market asparagus recover and rise sharply. But production for fresh market was then below the immediate prewar years, due partly to the increased demand by civilians and by the armed forces for canned asparagus.

The annual farm prices for California processing asparagus, and the state's production for processing use are shown together in figure 10. The processing production and farm-price relations are to some extent similar to those noted for fresh-market asparagus. An important difference is that asparagus production for processing generally increased during the war period. This will be considered again (p. 17) in the section on the canned pack of asparagus.

Figures 9 and 10 clearly show that the California farm prices of asparagus (fresh market and processing) reached higher levels during the war period than ever before, and even continued to rise for the 1946–47 season. Similar large price increases also occurred in other agricultural products and were due largely to the wartime influences of heavily expanded consumer incomes, a rising general price level, and inflationary pressure. However, such influences cannot be expected to continue indefinitely.

Figure 9

CALIFORNIA ASPARAGUS PRODUCTION FOR FRESH MARKET AND SEASON'S AVERAGE FARM PRICE FOR FRESH-MARKET ASPARAGUS 1918 — 1946



CANNED ASPARAGUS

The asparagus pack of other states competes with California's pack; and the pack of other states has been following an upward trend.

The canned asparagus industry in the United States has grown steadily since 1934. This development is well brought out by the figures for the canned pack (table 5). The United States canned-asparagus pack has more than doubled during the last thirteen years. Furthermore, the types of asparagus used for canning have shown significant changes. The 1934 canned pack was made up of 60 per cent regular white asparagus and 40 per cent all-green. As the total canned pack increased, the pack of regular white remained relatively constant. Thus, the increase in total pack was due entirely to the great increase in the pack of all-green asparagus. The growing importance of all-green asparagus for canning is indicated by the 1946 total pack, of which 73 per cent was all-green and only 27 per cent the regular white type.

United States Pack and Shipments. The greater portion of the asparagus canned in the United States has been packed in three states (fig. 11). While the trend in California's pack was downward from 1934 to 1941, that in New Jersey and Illinois was gradually rising. Since 1942, however, California has steadily increased its canned pack, whereas the packs in both New Jersey and

Figure 10

CALIFORNIA ASPARAGUS PRODUCTION FOR PROCESSING AND SEASON'S AVERAGE FARM PRICE FOR PROCESSING ASPARAGUS 1918-1946

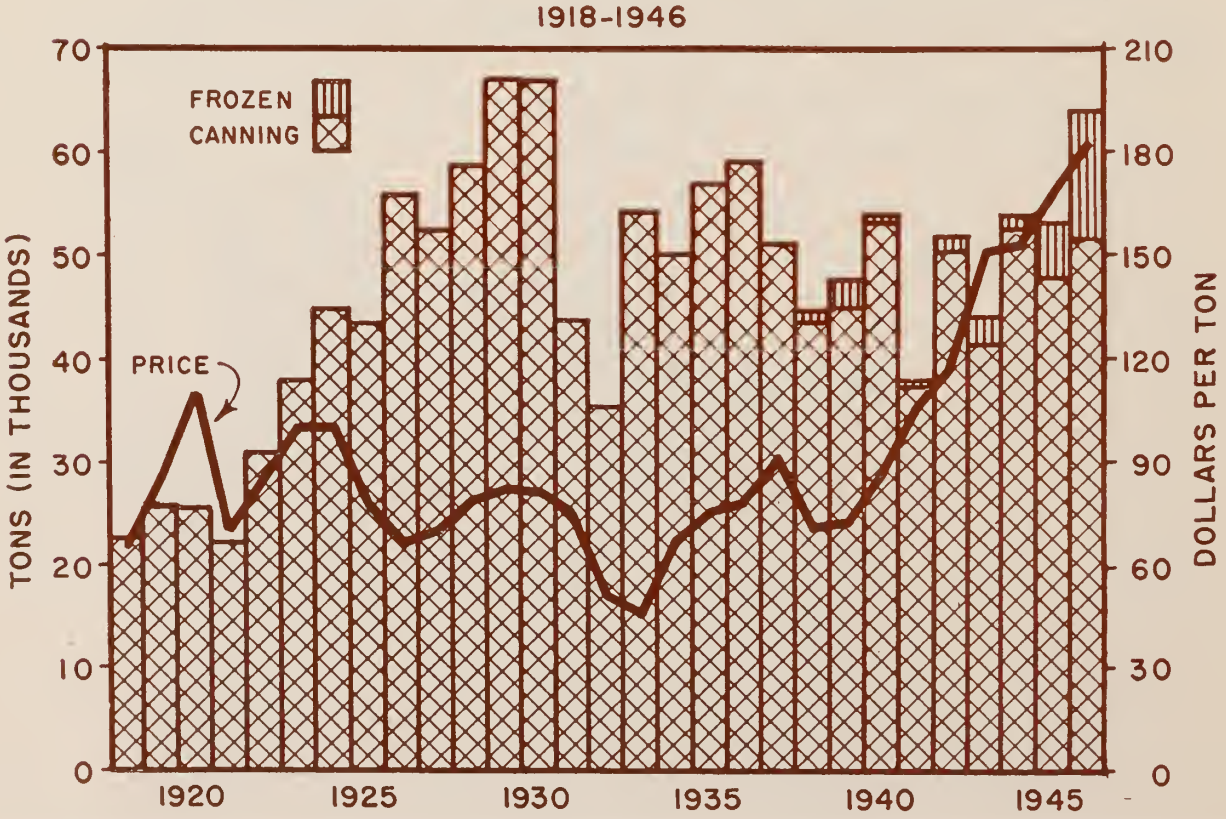
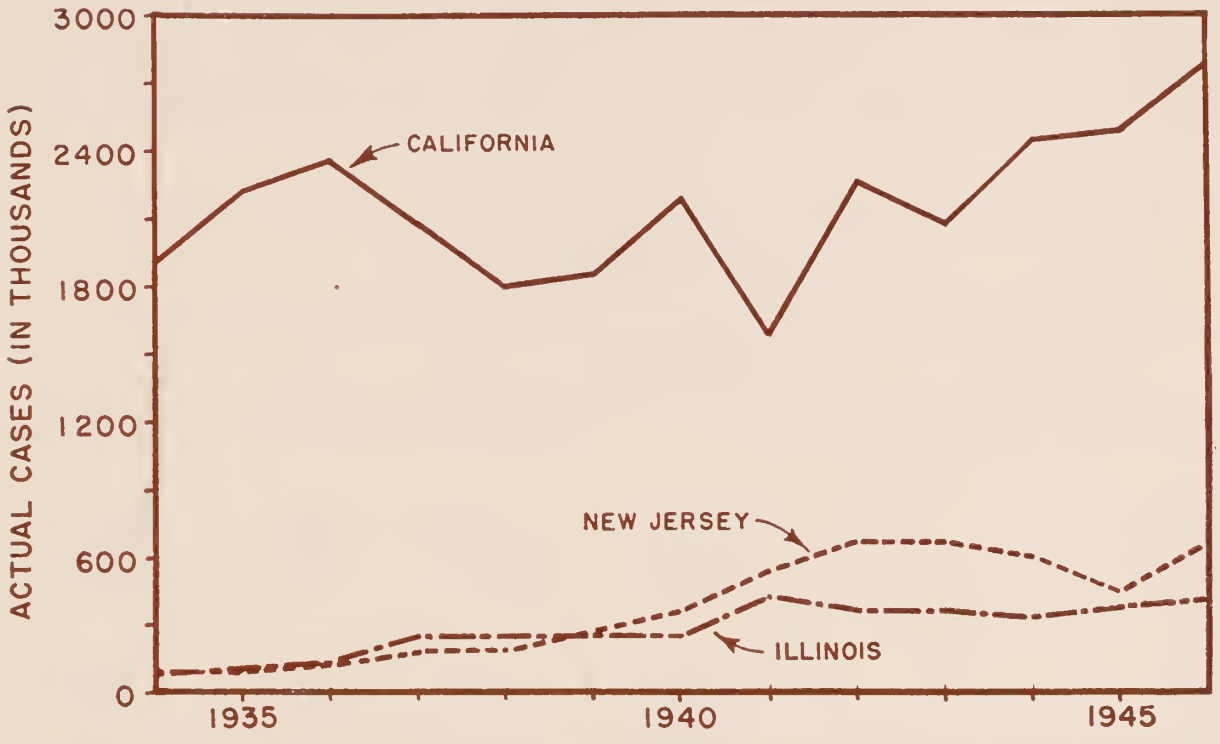


Figure 11

CANNED ASPARAGUS PACK
IN CALIFORNIA, NEW JERSEY, AND ILLINOIS
1934-1946



Illinois have remained relatively constant. Only twelve years ago, California accounted for about 90 per cent of the total United States canned-asparagus pack. But during the 1934–1941 period, the California proportion decreased and that of other states increased. Since 1942, the proportion of the total pack canned by the various states has been relatively constant, with California contributing about 60 per cent; New Jersey, 15 per cent; Illinois, 9 per cent; and the other states, 16 per cent.

Three distinct levels of total United States canned shipments have been in evidence over the last thirteen seasons (fig. 12). Each level has been higher than the previous one, with the third level 50 per cent greater than the first. This has resulted largely from the influence of government purchases for shipment to the armed forces and the allies. Shipments into domestic civilian channels increased gradually from the 1934–35 season to 1942–43, then decreased with a sharp drop in 1945–46, but increased to a new high in 1946.

Exports of canned asparagus were relatively constant from 1934–35 to 1937–38. For the next four seasons, exports were about half the previous period. During the war years, shipments to war services greatly increased total shipments into other than civilian channels. By 1946–47, export shipments declined almost to the level of the middle 1930's.

California Canned Pack and Shipments. The asparagus-canning industry in California has shown several distinct phases since 1918. From that date through 1929, the canned pack increased steadily to over 2.6 million cases. After a sharp drop in 1932, the pack increased slightly until 1936. Since 1936, two trends have been in evidence (fig. 11): a decreasing one to 1941, and a rising one from 1942 to 1946 when a record high pack was canned.

The two types of asparagus used for canning in California have shifted considerably in importance since 1930 (fig. 13). In that year, 90 per cent of the asparagus canned was regular white and the remaining 10 per cent all-green. The pack of regular white asparagus decreased gradually from 1930 through 1946, while the all-green pack was relatively constant from 1933 to 1941, and then increased steadily through 1946. By 1946, the regular white pack was only 42 per cent of the total pack, while all-green made up 58 per cent of the

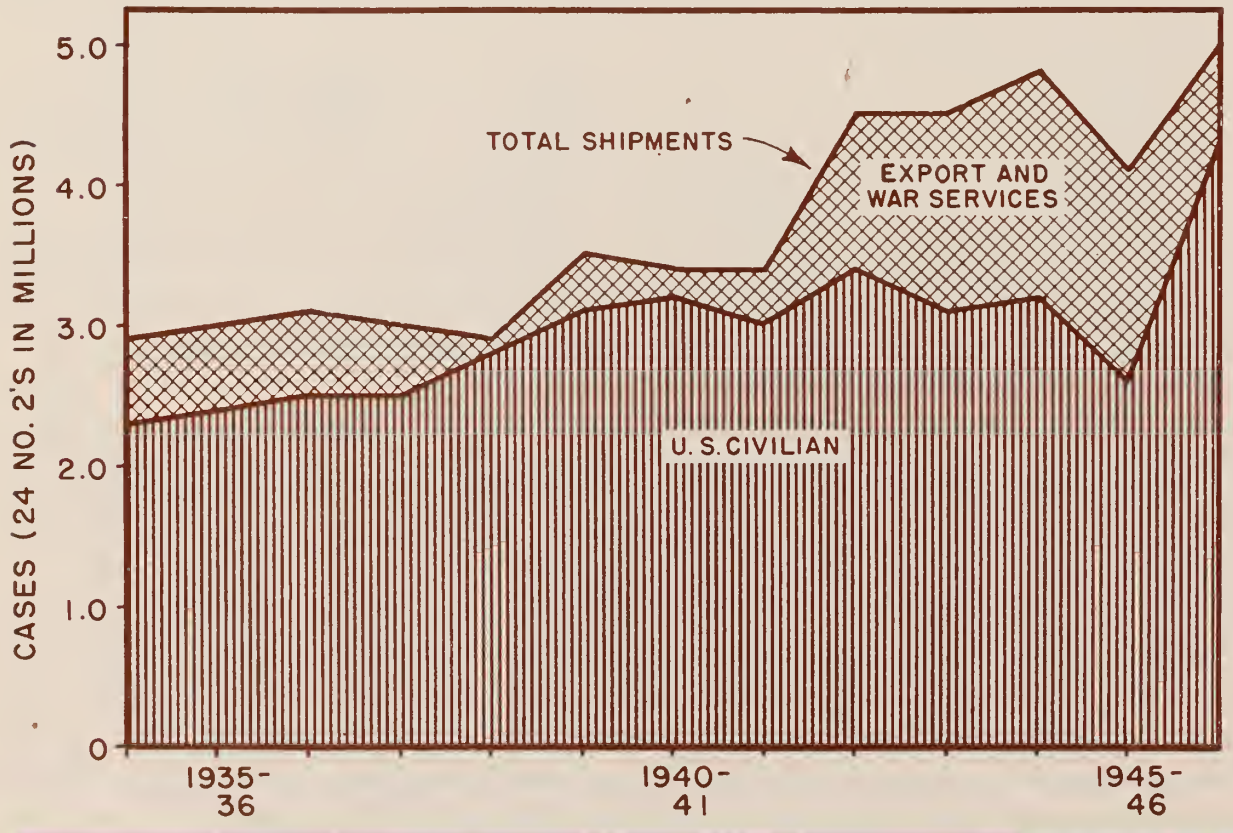
Table 5

CANNED ASPARAGUS PACK IN THE UNITED STATES AND THE MAJOR PRODUCING STATES

Period or year	California	New Jersey	Illinois	United States
	Actual cases in thousands			
Average				
1934–1938	2,074	132	160	2,513
1939–1943	1,988	484	321	3,225
Annual				
1944	2,436	590	315	3,833
1945	2,480	432	362	3,921
1946	2,783	624	396	4,443

Figure 12

UNITED STATES SHIPMENTS OF CANNED ASPARAGUS TO CIVILIANS AND TO EXPORTS AND WAR SERVICES SEASONS, 1934-35 TO 1946-47

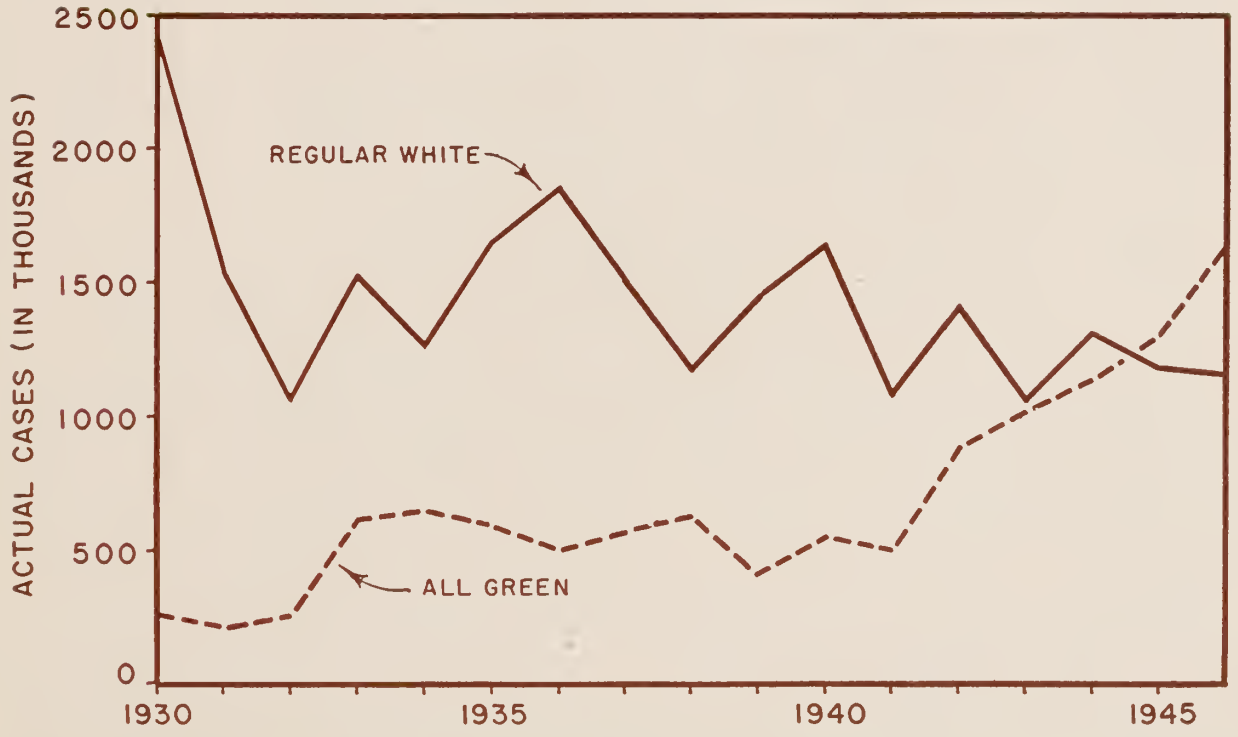


total. The increase of the all-green pack is associated with the expansion of asparagus canning in other states; California is the only state which cans the regular white pack.

Statistical demand studies of California canned asparagus have shown that the volume of annual shipments by packers is influenced not only by canners' f.o.b. prices, but also by the level of income in the country. At a given price, shipments tend to be greater when consumers' income is high than when it is low. The statistical studies also support the view that the canned-asparagus

Figure 13

CANNED PACK OF REGULAR WHITE AND ALL-GREEN ASPARAGUS IN CALIFORNIA 1930-1946



pack of other states affects the demand for and shipments of California canned asparagus. The pack of other states competes with the California pack. This is important to California growers of asparagus for canning, as well as to canners in this state, because the pack of other states has been increasing.

The major data on pack, carry-over, and shipments of California canned asparagus are shown in table 6. The average carry-over during the 1930–1935 depression period was more than twice the carry-over during the previous relatively prosperous period, 1925–1930. As purchasing power and economic activity increased from the middle 1930's through 1946, the carry-over each season has gradually been reduced. These adjustments in carry-over, plus the opposite adjustment in the pack each season, have resulted in a relatively constant annual supply available for shipment.

Agreements. As early as 1933, some California growers of processing asparagus and some packers wanted to establish a formal procedure to set the pack and take care of an expected surplus. But no plan was introduced, since it proved impossible to bring the opposing factions into agreement. Although no formal agreement was set up the following year (1934) the California

Table 6

CALIFORNIA PACK, CARRY-OVER, AND SHIPMENTS OF CANNED ASPARAGUS

Period or season	Carry-over March 1 (from previous year)	Pack	Total supply available	Shipments
	Actual cases in thousands			
Averages				
1925–26 to 1929–30	300	2,236	2,536	2,206
1930–31 to 1934–35	614	1,955	2,569	1,977
1935–36 to 1939–40	413	2,061	2,474	2,069
1940–41 to 1944–45	256	2,105	2,361	2,109
Season (Mar.–Feb.)				
1945–46	152	2,480	2,632	2,506
1946–47	126	2,783	2,910	2,720
1947–48	190	2,259	2,449	....

packers operated under a government license, and a committee fixed the pack as well as established minimum prices to growers. The next season (1935) the pack was fixed under AAA marketing agreement which also included a schedule of minimum prices to growers.

A series of agreements under state legislation began in 1936. In that year and the following, the California asparagus-canning industry was governed by agreements authorized by the California Marketing Agreement Act passed in 1935. Although no growers' prices were set nor was the pack limited in size, the agreement provided for inspection and grading, limited the length of the packing season, and restricted the grades which could be canned.

The California Marketing Act of 1937 served as the general authority for canning-asparagus agreements from 1938 on. The marketing orders set up under the Act provided for the inspection of all asparagus delivered to canners, and established minimum grading requirements. Also beginning in 1938, a Proration Program Committee for canning asparagus was established under authority of the Agricultural Prorate Act, with authority to fix the maximum seasonal pack and to set a closing date for deliveries for canning. These features were used in varying detail during the following years, and it is of interest that the use of controls over prices to growers has been less prevalent than the use of controls over the quality of the asparagus canned. During the war years, control over the quantity packed was not exercised, although control over the quality of the pack was maintained. Since it is likely that canning-asparagus controls will continue, the major features of the various programs are summarized, for convenient reference, in a separate appendix.

The tables and figures appearing in this circular are summaries of more detailed tables, which are published in a separate Statistical Supplement in mimeographed form and which give the sources in detail. This supplement and a summary of California Canning Asparagus Controls may be obtained by writing to the Giannini Foundation of Agricultural Economics.

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